Globalization but Still a Large Diversity of Productive Models and Corporate Governance Styles

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Built upon a series of international comparisons and historical retrospective analyses of the car industry, the article challenges the vision that lean production is the best productive model for the 21st century. From a theoretical standpoint, a productive model is defined by the conjunction of a profit strategy and a company governance compromise in order to make coherent product policy, productive organization and employment relationships, along with the relevance with respect the macroeconomic macro growth mode. The empirical analysis shows that at least 3 productive models co-exist: the toyotian is organised along permanent costs reduction, the hondian one is built upon innovation and flexibility, whereas the sloanian model, based upon volume and diversity, is still alive and quite efficient in the relevant European context. The prognosis is that this diversity of productive models is bound to continue, even the era of globalization and after the mega merger mania.

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I. Introduction

During the 1990s, many scientific publications, economic manuals and mass media pundits held that a correct representation of the industrial history of the 20th century would break this period down into three phases. The first phase was thought to involve "semi-craft" production, characterised by a wide variety of goods made by self-organised professional workers seeking to satisfy a demand that emanated from the upper social categories, these being the only persons who could access such custom-made items. Then came a phase of "mass production," characterised by the manufacturing of large series of standardised goods by unskilled workers whose efforts were strictly defined and prescribed. Thanks to the economies of scale that were made possible by this system, it was supposedly during this period that the working classes acceded to a consumption of industrial products. Lastly, the century's third and final phase of productive activity, called "*lean production*," was said to have appeared in the 1990s, first in Japan before diffusing across the rest of the world. This system was said to have enabled a manufacturing of diversified, high-quality and competitively priced goods, thanks to employees' and suppliers' joint efforts towards a continuous improvement in performance (the purpose being to satisfy a market that was becoming increasingly competitive and globalised). This final phase was said to have signalled the end of the so-called Taylorian division of labour, assimilated with a separation of design and execution. The MIT (Massachusetts Institute of Technology) put together an International Motor Vehicle Programme (IMVP) to orient research into automobile manufacturers and into variations in their levels of productivity. It subsequently devised the lean production theory to account for the system of production it was describing. The IMVP stated that this system "would change the world," and that it was imperative that American and European firms adopt it (Womack *et al.* 1990). This thesis, which was widely successful internationally in both professional and scientific circles, nevertheless raised a greater number of questions, and even outright criticism. This in turn led to a new wave of research throughout the 1990s – initiatives that enabled more operative types of theoretical formulation. The purpose of the present book is to present these

latter formulations.

History however moves quickly. The "system that was going to change the world" was not able to keep the country where it was said to have originated from going into a protracted and painful crisis. Nor did it prevent some of the companies who allegedly embodied its principles from being forced to ally themselves with (or even be taken over by) foreign groups – only to be restructured and discover that they had much to learn from foreigners who were reputedly less efficient. Methods that had been attributed to the Japanese and which had seduced economic and political leaders (as well as many university professors and researchers) began to lose their charm.

One intellectual fashion replacing another, now a new "Anglo-Saxon" model, based on the search for short-term profitability and a consequence of the power that has been acquired by institutional investors (pension funds, mutual funds, *etc.*) is supposedly forcing itself on the rest of the planet – just as 10 years ago people had been saying that lean production was sure to be the wave of the future. The disillusion is as blinding as it is fascinating. It makes it difficult to learn from the past and causes analysts to repeat the same mistakes – notably that which consists of seeing a new phenomenon as a potentially general and irreversible tendency without first examining the conditions that led to its birth or which are necessary if it is to spread.

It is crucial that analysts avoid falling prey to faddish thinking again, whatever the nature thereof. Observers have to engage in conceptual clarifications and carry out meticulous analyses. This has been the goal of the "GERPISA International Network" (*Group for the Permanent Study of and Research into the Automobile Industry and its Workers* [France, see appendix]), an association of researchers who have been focusing on the automobile industry in an attempt to verify the validity of the IMVP's thesis. The GERPISA has been studying automobile firms' trajectories as well as the spaces in which such companies have deployed their activities from the late 1960s through the late 1990s. This has been achieved via two international research programmes: "*The Emergence of New Industrial Models*" (1993-6) and "*The Automobile Industry Between Globalisation and Regionalisation*" (1997-9). The authors who managed the scientific aspects of these two programmes, present here the conclusions that they have personally drawn from them,

enhanced by findings from research on the automobile industry since its birth. They provide an analytical structure that could readily inspire research into other sectors of activity. For the moment, the automobile sector is the only one to have been subjected to systematic investigation at a worldwide level.

The stakes are high in this debate. At a scientific level, they involve a definitive understanding of the full diversity of the various forms that the relationship between capital and labour has assumed, wherever this relationship is being renewed on a daily basis (*i.e.*, in those firms and economic and political spaces where such activities are deployed). At a practical level, we focus on the conditions underlying firms' durable profitability (and thus longevity), thereby assessing the room to manoeuvre for each of the actors involved: shareholders, banks, executives, employees, labour unions, suppliers, the State and local authorities – with consideration being given to each actor's own economic and social outlook.

The paper first present the interest of the notion for analysing the process that gives birth to a "productive model." The purpose is to build a definition that can be used operationally. A second part provides an overview of the way in which these productive models have evolved over time, and specifies both the conditions in which firms can be profitable as well as the room for manoeuvre that actors have at their disposal.

II. Engendering Productive Models: An Analytical Structure

Productive models have spawned at least three major debates amongst social scientists. The first relates to the criteria that make it possible to distinguish amongst such models; the second to their singular or pluralistic nature; and the third to their universality or else embeddedness in a given context. A good way to broach these issues would be to remind ourselves of the main challenges firms face. This will allow us to reconstitute the processes that cause them to make strategic choices in order to become profitable, or to acquire resources that they can implement.

Two Basic Types of Constraints and Uncertainties

In the 18th century, Europe established the freedom to buy and sell not only goods and services but also the individual and

collective capacities for realising them. This created competition between firms and between individuals; transformed the businesses affected into wage earning activities; and transmogrified the means allocated towards this end into a return- seeking type of capital investment. Amongst a whole slew of social relationships, this new freedom lead to one that was generally called the "relationship between capital and labour," and which has since become a predominant form. The loosening of the constraints and prohibitions that had been imposed on the economy by the previous system of professional guilds and feudal and royal prerogatives (which had affected both the owners of the means of production as well as their workers) was offset by a twofold constraint and a double uncertainty: the constraint that all capital invested be profitable and that every wage earner accept geographic and professional mobility; and market uncertainty as to the actual selling of the goods and services on offer plus labour uncertainty as to the feasibility of producing such goods and services under the required conditions (Freyssenet 1999b).

All invested capital is in fact obliged, over the medium term, to generate a profit that is at least equal to average rates of profit – otherwise it will one day be subject to competition, elimination or absorption by more profitable units. Hence the unending search for new markets, sources of profit, products and means of production. As for workers, they have been forced to develop and even change their competencies so that they can become purchasable commodities for employers and be shifted back and forth (depending on the location of capital). The result is a considerable acceleration both in technical change and also in a professional and geographic mobility that has been historically manifested by the major upheavals that periodically revolutionise industry as well as the space(s) in which it operates. Hence the sentiment that there have been a succession of industrial revolutions.

These obligations have lead to a considerable extension of the marketplace and of the division of labour. With society becoming increasingly focused on wage earning, product markets depend more and more on the income that employees derive from the sale of their working capacities.

What Do We Mean by a Model?

In social sciences, a model is customarily referred to in four different ways. Each of these notions creates certain problems yet contains at least one aspect that should be taken into account when searching for a more operative concept.

• *An ideal to be attained*

In the grand tradition of the Scientific Organisation of Labour, a model is that system of production which guarantees the best results. There supposedly exists a *one best way* that firms must adopt if they do not want to be eliminated by their competitors. Yet there is no lack of examples of solutions that diverge yet which have similar outcomes. Nevertheless, we should retain the idea that a model should be a socio-productive configuration that is likely to galvanise the actors in a firm so that they work to increase its performance.

• *A stylised set of attributes that really do exist*

A model is a sort of small-scale map of socio-productive practices. Firms are grouped according to the number of attributes they share. Constellations of attributes that are correlated with one another and which feature positive financial results are deemed to be models. This conception raises a host of problems: it is very dependent on available data; it leads to a proliferation of different types; and it blurs divergences (differing meanings for one and the same attribute). Its aim should however be kept in mind – to ascertain those socio-productive configurations that actually do perform well, and not just those models that have been made popular by their inventors or by management sciences.

• *Building logical sequences based on actors' allegedly fundamental behaviours*

Here a model is seen as a method for detecting the coherency of a socio- productive configuration by means of a theoretical construct that supposedly reproduces the nub of the actors' behaviours. These theoretical constructs, notably those that have been developed by many economists, are unfortunately based far too often on abusive simplifications that have caused people to believe that such practices result from rational calculations which are intended to optimise outcomes. It is true that actors must seek to ensure the longevity of the company for which they are working, *i.e.*, its profitability. But there are many different ways to make profits – and to make losses.

• *A coherent response to the problems caused by previous developments*

To understand the true meaning of these technical, organisational, managerial and social changes, they are analysed as if they are responses to the problems that are inherent to a dynamic itself, inherited either from an earlier stage of the division of labour, or else from the preceding productive model and corresponding institutional regime. It has become apparent that these changes should be analysed instead as attempts to cope with an uncertain outcome – and that they comprise one solution amongst a whole range of possibilities.

• *The productive model as a largely unintentional process that creates an external relevancy and internal coherency.*

The preceding critical examination has caused productive models to be thought of as a largely unintentional process for creating an external relevancy and internal coherency for these technical, organisational, managerial and social changes, in order that they may respond to the new problems of economic profitability and social acceptability that have been born out of the previous models' dynamics and out of transformations in the competitive, macroeconomic and societal contexts. An approach identifying this sort of model should be substantive (describing the contents of the practices), historical (identifying the problems faced so as to understand what the practices actually mean) and analytical (process of building the firm's profitability through the creation of a modicum of external relevancy and internal coherency for the changes) (Boyer and Freyssenet 1995).

Yet nothing guarantees a priori that those who are investing their capital will find clients to purchase the products being manufactured. Nor are they sure to obtain in all circumstances from their employees the output that they desire (on time, with good quality and at a low cost), since this will depend on employees' competencies and on individual and collective acceptance of labour relations, rights and usual practices.

III. Paths That Could Theoretically Lessen Market and Labour-Related Uncertainties

There are several ways to reduce market uncertainty.

• The first consists of determining as far as this is possible the extent to which solvent demand actually exists. It also involves acquiring a durable competitive advantage, given the priorities that the potential buyers may have (price, quality, diversity, novelty, availability, *etc.*). Competitive advantage can include wages, products, means of production, organisation *etc.* It can also be common to firms in a given country, with the public authorities ensuring corporate competitiveness in the international marketplace and attracting foreign firms into the country via an advantageous tax system, favourable exchange rates, an efficient infrastructure, a well-trained labour force, support for technological innovation, *etc.*

• The second is to act on the source and distribution of

national income, in other words, on the "growth mode." The purpose is to increase the predictability of quantitative and qualitative variations in demand, and to limit the number of areas where there is competition between firms and between employees. This is a type of capitalism that has been organised in such a way as to respect macroeconomic and social equilibrium. For instance, by adopting a nationally co-ordinated and moderately hierarchised distribution of income during the post-war boom years, a number of industrialised countries provided their firms with a good visibility of the volume and structure of future demand.

Countries, like firms, are not free to choose between these two major paths towards reduced market uncertainty. The ability to reach this goal depends specifically on each country's mode of international insertion, and on its sources of growth.

To reduce labour uncertainty, there are also two paths that can be followed:

- either establish a long term of trust with wage earners, granting them the power to co-operate and to share their know-how on the condition that they agree to help improve products, production techniques and the firm's performances (in exchange for a compensation that can be negotiated);
- or else to restrict, through the meticulous preparation and prescription of work, employees' freedom to evaluate things themselves – this being a strength they may otherwise use to gain advantages, de facto power or rights that are judged by the possessors of capital to be contradictory to the firm's mission and objectives. Here the division of labour becomes a division of the intelligence of labour.

Although there have been a number of oscillations between these two paths, there is no question but that the second one has dominated historically, as witnessed by the various and successive technical and organisational choices that have been made in all of those sectors of activity and countries that capitalism has reached – to such a point that the first path seems "unrealistic" and contrary to industrial "modernity."

All in all, market and labour uncertainty can be managed at two different levels:

- at the level of the economic and political space that has been set up (generally a national space but sometimes a world "region"), through the establishment of a "growth mode,"

• at the level of the individual firm, through the choice of a "profit strategy" that takes into account market and labour characteristics – and through the building of a "productive model" that can implement this profit strategy.

IV. Growth Modes

These are characterised by a main source of national income and by a form of distribution for this income. Depending on the way in which they are combined, market and labour uncertainties are not all the same. As a result, the conditions in which firms can make profits also differ (Aglietta 1976: Boyer and Mistral 1978; Boyer 1988; and Boyer and Saillard 2002).

A. Sources and Forms of National Income Distribution

Growth in national income can be primarily "driven" by investments, by domestic consumption or by exports. In the first instance, a large percentage of the income created is reallocated to the production of the infrastructure and of the means of production. Where consumption is a priority, growth originates from a national income distribution that encourages greater purchasing power for all or part of the population. In this situation, growth is based on the productivity gains that have been achieved in a given space. Where growth is driven by the export of raw materials, agricultural products or industrial goods or services, its rhythm depends on world prices (for the first two motives), or else on price competitiveness and/or degree of specialisation for the latter. There is no doubt but that growth in all countries is nurtured by all three sources, but in reality one source usually dominates. This depends on a country's resources, the developmental phase in which it finds itself, its international positioning, industrial history and national political compromise.

Four main forms of income distribution were observed during the 20th century.

• A "competitive" form of distribution prevailed in many industrial countries during the first half of the century, and has recently reappeared in certain countries. This form is a function of the balance of power at a local and category-specific level, and

depends on financial, ownership-related and commercial opportunities.

• "Shortage-related" distribution forms cropped up during the 1920s and persisted after the Second World War in certain countries involved in a rebuilding process (or for a longer period of time in countries with a Soviet type of economy). This is a typical distribution form for eras marked by political, military or economic mobilisation. It goes hand-in-hand with investment as a (main) source of growth.

• A "nationally co-ordinated and moderately hierarchised" form of distribution was an attribute of most so-called Western countries (including Japan but excluding the Great Britain) from the 1950s until the early 1980s. Political, economic and social partners would periodically get together to discuss how increases in total wages could correspond to mutually acceptable macroeconomic criteria. They would also discuss income disparities and ensure that the pyramid remained relatively flat, notably through fiscal measures and transfer policies.

• An "inegalitarian" form of distribution has above all persisted in certain formerly colonised countries where an initially land-based oligarchy has been able to renew the economic and political foundations of its power. As such, this form exists to benefit social categories comprised of (land)owners and other leaders, only redistributing a small proportion of income to the dependent social classes, and emphasising vote-catching postures.

There are fewer growth modes than there are combinations of income sources and forms of distribution. Eight main varieties could be counted during the course of the 20th-century. The relevant space in which firms have been deciding upon their profit strategy and building up their productive model has therefore been neither a (so-called) unified global space − nor a specific and unique national one.

B. Eight Growth Modes That Shaped the Market and Labour During the 20th-Century

By convention, growth modes are first labelled by the specific form of income distribution which they represent, and then by the main source of this income. A synopsis of their characteristics is provided in Table 1.

• A "competitive and competition led" mode could be found in most European countries before the First World War. It remained the dominant mode for certain countries in this group during the interwar period. It has continued to be Great Britain's de facto mode until today, with the exception of a short period straddling the 1960s and 1970s. It constitutes the theoretical horizon of liberalised global trade. Exposed to free trade, those countries that have adopted this mode experience a type of growth whose rhythm matches variations in firms' competitive positions, both in the domestic and in the export markets. National income distribution reflects the balance of power at a local and category-specific level as well as financial opportunism – with "external constraints" and the risk of bankruptcy ultimately playing a regulator's role for all. One after the other, all firms and employees become competitors as well as targets of competition. Not only is the market limited because of this state of affairs, it also becomes unstable and economically and socially compartmentalised, reaching in certain instances a balkanised status. As for the labour factor, it is both flexible and fragmented: flexible because high inter-firm mobility maximises wages where the labour market allows for this (given the uncertain nature of future outcomes) – and fragmented because professional groups, in anticipation of harder times, organise themselves when they are capable of doing so in such a way as to obtain or defend (each independently of the other) the autonomy and advantages they have gained.

• A "competitive and consumer-oriented" mode is characterised by a type of growth that is driven by domestic consumption and competitive distribution. This mode prevailed in United States until the Second World War, and in certain European countries during the interwar period. The United States went back to this mode in the 1980s, attempting to deregulate the last sectors where income distribution was still carried out on a "nationally co-ordinated" basis. Consumption-based growth generates a more stable and broader type of demand than the preceding mode, but competitive distribution tends to restrict its extension to the average, independent and/or wage earning social categories. It also tends to provoke the emergence of new expectations from those social groups within the general population that have either benefited from the competitive framework or else been penalised by it. The economies of scale that are enabled by this mode engender a

division of labour, bringing with it a change in the structure of the workforce. Professional guilds are replaced by industry-wide unions. It is easier to organise work and create solidarity between various category-specific and national levels than to limit competition between wage earners.

- A "competitive and price export-oriented" mode has characterised certain Asian countries since the 1970s. These countries are either totally lacking in resources, or else possess very few. On the other hand, they are richly endowed with a well-trained workforce and open to foreign investors. Moreover, for very specific historical and geo-strategic reasons (*i.e.*, "socialist containment" policies), they have been basically involved in one-sided export activities, first sending industrialised countries cheap bottom-of-the-range products, and later more sophisticated goods that could be sold at very competitive prices. Certain countries (*i.e.*, South Korea) have deliberately tried to use the international situation in such a way as to build up a purely national industry, notably in the automobile sector, whilst methodically organising the indispensable technology transfers.
- A "co-ordinated and consumer-oriented" growth mode characterised the United States from the 1940s until the early 1980s, and France and Italy from the 1950s until the mid-1980s. This mode featured a consumption-driven growth that could be extended and developed due to a nationally co-ordinated and moderately hierarchised distribution of productivity gains that took on the form of increases in the purchasing power of wages. Factors such as a generalised rise in living standards, a moderate and stabilised hierarchisation of income and upwards social mobility engendered a mass market for household equipment whose hallmark was the gradual nature of its hierarchy (*i.e.*, it lacked in any major discontinuities between its various segments). Work was organised into powerful industry-wide and national labour unions that became indispensable partners in the income setting process. The different work statuses ensured both stable employment and income security, during the population's working life as well as afterwards.
- A "co-ordinated and specialised export-oriented" mode was characteristic of Germany from the 1950s until the late 1990s and of Sweden also from the 1950s until the late 1980s. Although Sweden's income distribution mode has since gone into a major

crisis, Germany has to a large degree been able to preserve its variant. National growth in this mode is based on exporting goods and services that are sufficiently specialised to avoid being subjected to price-based competition. National income distribution reflects the gains that are derived from this competitiveness. It is co-ordinated nationally and barely hierarchised, meaning that domestic consumption amplifies growth. This in turn stimulates investment. The market to which this type of mode lends itself is moderately hierarchised and dominated by middle and upper social segments as a result of the high wage levels that are being paid. Work is characterised by very stable employment, a large percentage of skilled workers, co-operative yet powerful labour unions, and advanced social protection systems.

• A "co-ordinated and price export-oriented" growth mode is driven by exports of price competitive mundane products. The nationally co-ordinated and moderately hierarchised distribution of income reflects export performances. This was Japan's mode, and to a large extent it remains in place in that country. As in the preceding example, domestic consumption and investment benefit from the knock-on effect of export success. The domestic market depends on preserving the exporting sectors' price competitiveness, and work is stable as long as there is sufficient mobilisation in favour of maintaining this competitiveness.

• A "shortage and investment-oriented" mode translates periods of political and military and economic mobilisation, used either for building foundations for economic development, or else to prepare for war or to rebuild afterwards. The mode was found in totalitarian regimes and in countries that had to re-build after the Second World War. The automobile market is basically limited to commercial and military vehicles, and to cars destined for leaders and administrations.

• An "inegalitarian and rent-oriented" mode is characterised by a type of growth that is driven by the export of raw materials or agricultural products, and by the distribution of the gains derived from the highly inegalitarian rents which stem from the vote-catching system. National income is appropriated by a few minorities who redistribute it in part to other dependent social groups, according to practical and political necessities. Changes in world prices rhythm a national growth that does not have enough autonomy to fend for itself when faced with the shocks and

uncertainties that come out of the international economy. For this reason, the domestic market either experiences periods of sudden frenzy or else of brutal collapse, all of which are accentuated by frequent modifications in the legal framework within which production activities are carried out.

Of course, modes of growth cannot explain everything about demand and work. However, they do determine two essential elements for choosing a profit strategy: volume and structure.

V. Profit Strategies

Inasmuch as market and labour factors (much like the institutions that accompany them) vary according to the growth mode that is involved, firms cannot all exploit the same profit sources.

Six profit sources are directly related to the production of goods and services:

- economies of scales, with fixed costs being distributed across the widest possible volume so as to reduce unit costs,
- the diversity of the products offered, this being something that makes it possible to extend demand to solvent clienteles by satisfying their expectations,
- product quality, enabling a higher sales price or increased market share,
- commercially relevant innovation, thus guaranteeing a monopoly rent for a variable period of time,
- productive flexibility, allowing for a rapid adjustment of costs to variations in demand,
- permanent reduction in costs, so that sufficient profit margins can be maintained whatever the circumstances.

Of course, all firms are aware of the existence of these six sources of profit. However, they cannot all be exploited or combined with the same ease. Indeed, for some of these sources to be exploited at all, certain very specific market and labour conditions may be necessary, situations that might only exist in particular growth modes. For example, there is no use relying upon economies of scale if the conditions that enable a mass consumption do not exist – this being a bitter experience that Henry Ford went through in Japan and in Europe during the

interwar period. Certain profit sources also feature contradictory requirements that make it difficult to exploit them simultaneously and with the same level of intensity. As such, they cannot be combined. It is difficult for example to achieve economies of scale when offering as many specific models as there are types of clientele. It is also dangerous for a firm seeking to make room for itself amid profitable rivals to try to compete with them whilst exploiting the same profit sources as the ones they are using.

The profit combinations that are feasible and exploitable constitute what we can call firms' "profit strategies." Without purporting to have compiled a comprehensive list of past profit strategies and without predicting all of the strategies that will be invented in the future, we have nevertheless been able to identify at least six profit strategies that were actually implemented in the automobile sector during the 20th-century. These strategies have been labelled in such a way as to stress the profit source(s) they emphasise: "quality" strategy, "diversity and flexibility" strategy, "volume" strategy, "volume and diversity" strategy, "permanent reduction in costs' strategy, and "innovation and flexibility" strategy (Table 2). Firms are therefore differentiated first and foremost by their profit strategy, before potentially being further subdivided to reflect the means that are used to implement these strategies.

VI. Productive Models

Insofar as our main concern is to understand the conditions in which a firm can be profitable, the term "productive" should be understood in its widest possible sense, *i.e.*, as the production of value added. It thus encompasses not only the manufacturing of goods and services, but also the design, management, sourcing and sales functions.

Profit strategies cannot be implemented with just any means that are available. The resources that are used must fulfil each strategy's specific requirements; and they must be coherent with one another. For example, the "volume and a diversity" strategy necessitates polyvalent equipment and employees, whereas the "volume" strategy requires a totally different process, one that is based on standardised production and on workers who are specialised in one type of workstation. Still, the means that firms

apply are in fact often the outcome of successive choices that in hindsight may turn out to have been contradictory. They can also cause tensions between a firm's actors, and even create external constraints.

A. The Conditions in Which Strategic Means Can Become Coherent with a Range of Choices

The creation of a modicum of coherency between the means being used and the "profit strategy" being pursued cannot be achieved or perpetuated unless the main actors in the firm agree on the strategy – and on the means themselves. For example, there can be no durable profits for a company pursuing an "innovation and flexibility" strategy if its protagonists cannot find a form of productive flexibility that is acceptable to all. Moreover, no agreement can be reached unless it offers all actors an opportunity to realise their varying medium and long-term personal objectives.

Thankfully, the requirements of a given profit strategy can be satisfied in several different manners. It is in no way written in stone that it is compulsory to adopt one specific set of means when a given profit strategy is to be implemented. For example, a permanent reduction in costs can be achieved by other means than the ones thought up by Taiichi Ohno, acknowledged to be the father of the Toyota production system. Note that following the crisis of work that erupted at Toyota in the early 1990s, the company was forced to cease its efforts to get employees to assume responsibility for reductions in standard working times. Moreover, it was also obliged to adjust downwards its expectations of the contributions that employees were supposed to make to savings in materials and tools. The innovative capacity of a firm pursuing an "innovation and flexibility" strategy can be sustained by setting up a system that encourages the emergence of imaginative people within the company – or conversely through an external recruitment of designers who have proved themselves whilst working for competitors or in other sectors. From a strategic point of view, the choice between these two solutions is about the same. They diverge greatly, however, with respect to the productive model. Each has a different way of modifying the internal company governance compromise and of affecting the product policy and employment relationship.

There are a number of reasons why a variety of means can be used to fulfil the requirements of one and the same strategy. First and foremost, the different growth modes not only provide varying frameworks for generating such profit strategies, but they also constitute a resource centre that allows for the strategies' implementation. Growth modes infer the existence of certain means. Moreover, through the laws, rules, institutions and practices that they have generated, growth modes provide arguments in favour of adopting a certain type of means as opposed to another. It remains that there are situations in which a firm's actors may be taken out of the equation.

B. The Three Components of a Productive Model

Firms' socio-productive configurations present many different aspects, and at first glance it is not easy to detect which need to be examined. One solution to this problem is to focus on which measures are necessary for the implementation of a given profit strategy. This indicates which requirements are crucial.

The profit strategy analysis (Boyer and Freyssenet 2002, Chs. 2-7) demonstrates that the main elements can be combined into three prime components: "product policy," "productive organisation" and "employment relationship."

- Product policy refers to target markets and market segments; to the design and range of the products on offer; to sales volume objectives; to the models' diversity; and to quality, novelty and margins.
- Productive organisation refers to the methods and means that are chosen to enact the product policy; to the extent to which activities have been integrated; to their spatial breakdown; to the organisation of design, outsourcing, manufacturing and commercialisation; to the techniques used; and to the management criteria.
- The employment relationship refers to systems of employee recruitment; to employment; to classifications; to direct and indirect remuneration; to promotion; to scheduling; to possibilities of expression; and to employee representation.

C. Defining Productive Models in a Way That Allows Them to Be Identified

A productive model materialises at the conclusion of a largely

Definition of Productive Models

Productive models can be defined as "company governance compromises" enabling a durable implementation of those profit strategies that are viable for the growth mode frameworks of the countries in which a firm is organising its activities, thanks to a series of means (product policy, productive organisation and employment relationship) that are coherent and acceptable to the actors involved.

unintentional process during which coherency is created between the product policy, the productive organisation and the employment relationship, on one hand, and the profit strategy that is being pursued, on the other. This can only be achieved once two conditions have been fulfilled: the strategy must be relevant within the framework of the growth mode that governs the economic and political entity within which the firm is deploying its activity; and a durable company governance compromise must be set up between the firm's various actors (owners, executives, employees, labour unions and suppliers) concerning the means that are to be used so that the chosen strategy can be implemented in a coherent manner.

Inversely, those firms that do not successfully invent or adopt a productive model (that is, which do not become durably viable) are those where the profit strategy is not or is no longer relevant; and/or where the company governance compromise has not made it possible to devise means that are coherent and acceptable to all of the main actors; and/or where the profit strategy is of dubious value for at least one of them.

Whenever the terms and contents of the company governance compromise are modified, the productive model is transformed into a new model. However, the new compromise may well come to fruition without any coherent means being in place. The productive model then becomes an incoherent socio-productive configuration, undermining the foundations of the firm's profitability and therefore its longevity.

An appropriate profit strategy can just as easily not lend itself to any productive model whatsoever, as it is the case for the "quality" strategy that was put in place after the Second World War.

The models' plurality is therefore predicated first of all on a differentiation between growth modes; then on the selection of a

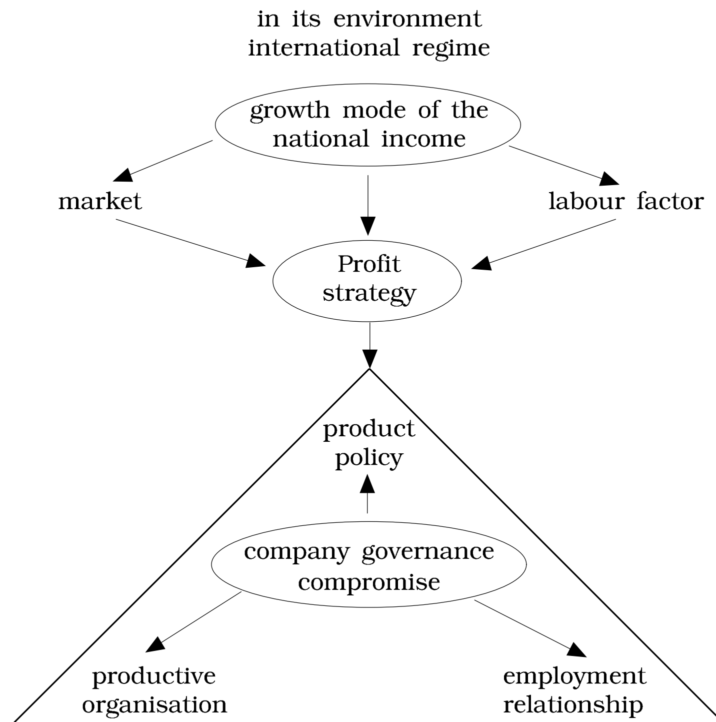

Figure 1
A Productive Model Is Its Context

profit strategy; and finally on the adoption or invention of means for implementing this strategy (means that are coherent and acceptable to the actors in the firm). All in all, it has been possible to identify six productive models in the automobile sector over the course of the 20th century: "Taylorian," "Woollardian," "Fordian," "Sloanian," "Toyotian," and "Hondian." Their characteristics, the profit strategy they pursue, the national modes of growth within which they can prosper, their history and their possible future are summarised in Table 3. The process for engendering productive models can be summarised and represented by the Figure 1.

VII. The Main Results of the Comparative and Historical Analysis

The three industrial models that are commonly distinguished in the automobile sector and by extension in all industries ("craft production," "mass production" and "lean production") actually stem from historical amalgamations and conceptual confusions.

A. Are Re-Evaluation of the History of Productive Models

By the beginning of the 20th century, most automobile firms had become industrial companies that relied upon machine tools and interchangeable parts (even when their vehicles were being built at stationary workstations or on short non-mechanised lines). Such firms did not disappear from the United States because they could not compete with the mass producers – the real reasons were the collapse in their specific clientele, and the cash problems they suffered from after the 1929 Depression. Not only did firms of this ilk survive in other countries, they even thrived, competing efficiently with Ford's overseas subsidiaries. It was these latter entities that, in the absence of those conditions that are propitious for mass consumption, could not remain profitable for long. Moreover, with the diverse product range these industrial companies offered, and because of the flexibility of their production system, they were able to function profitably in markets that were both limited and diversified. Towards this end, they built up several productive models, at least two of which have been identified and described: the Taylorian and the Woollardian model. Many analysts affirm that they have a sound understanding of the former, which they see as a forerunner of large series production – but they are wrong, given that in actual fact it was not towards this end that the model had actually been conceived.

Mass production, inaccurately labelled "Taylorian-Fordian" production by some analysts, is in fact a mixture of two models, the "Fordian" and the "Sloanian," whose conditions of viability and characteristics diverge, even if they share with one other (and also with other models) mechanised production or assembly line principles. The Fordian model implements a "volume" strategy with its mass production of a standard vehicle, whereas the "Sloanian" model implements a "volume and diversity" strategy by

"superficially" diversifying models by body, internal fittings and accessories whilst commonalising non-visible parts and subsystems. Just as the former model's existence was transitory and geographically limited, from the 1950s onwards the latter was seen as the one that everyone should be adopting, given the finely hierarchised demand that was developing from the bottom to the top-of-the-range. After all, this was an era marked by the clear convergence of these two segments.

Nevertheless, the Sloanian model's diffusion was impeded by the crisis of work that broke out in the late 1960s – and then put to rest by the monetary and oil crises of 1971-4. These crises even appeared to have killed off, once and for all, the model's entire viability. However, it was actually during the 1960s that the Sloanian model first got into trouble in the United States, paradoxically as a result of its success, and even as it was being feted as a *one best way* for the second half of the 20th century. In addition, it did not spread as widely as people were predicting in the precipitously generalised managerial speeches of the time. In fact, it was only adopted by a few firms in those industrialised countries where national income distribution was being carried out in a co-ordinated and moderately hierarchised way.

B. Productive Models Are Neither Unique to an Historical Era Nor to a Given Country

Not one but two original industrial models were taking shape at the same time in the Japanese automobile industry: the Toyotian model, with its emphasis on a "permanent reduction in costs," and the "Hondian" model, with its implementation of an "innovation and flexibility" profit strategy. These two models have been wrongly amalgamated under the title of "*lean production*," but in fact they differ on certain essential points. Moreover, the remarkable performances of the firms that have embodied these models, Toyota and Honda, did not spell the death of a Sloanian model that Volkswagen began to adopt in 1974. Actually VW profitably exploited the possibilities it faced in a market that found itself in a product renewal phase. In fact, these were the only three firms to have had a "breakeven point" that was constantly and significantly below their value-added threshold. All other carmakers' automobile businesses experienced periods of non-profitability.

These three firms' performances did not result from some intrinsic and timeless quality of the models they embodied. They stemmed first and foremost from the extent to which they had implemented profit strategies that suited the "growth mode" of their countries of origin. Moreover, these growth modes turned out to be perfectly adapted to the new international circumstances that marked the post-1974 period. In undermining international growth, floating exchange rates and oil shocks provoked a confrontation between industrialised economies. The countries that found themselves in a favourable position were those where growth was export-driven, and where a co-ordinated and moderately hierarchised distribution of national income was being carried out as a function of external competitiveness (*i.e.*, Japan and West Germany). The firms that were particularly in tune with the new environment were those where the profit strategy was either based on a "permanent reduction in costs" (like Toyota), on "innovation and flexibility" (like Honda), or on "volume and diversity" (like Volkswagen, which despite the sudden and durable slowdown in demand was again able to achieve economies of scale through a systematic commonalisation of the platforms used for its own models or for the models turned out by the manufacturers it was acquiring).

In addition to this first condition of profitability, the three companies, Toyota, Honda and Volkswagen also fulfilled the second one, developing a "company governance compromise" between the main protagonists of their "product policy," "productive organization" and "employment relationship." This is what enabled each of them to implement the strategy it had chosen with a modicum of coherency.

Certain Japanese carmakers, notably Nissan, Mazda and Mitsubishi, either straddled several strategies or were unable to build a lasting compromise based upon coherent means. Starting in the 1980s, Japanese firms began to experience difficulties that observers at the time chose not to analyse as being the result of a "Japanese model" they still considered to be superior. The "quality" strategy of several German and Swedish manufacturers was particularly in tune with the "co-ordinated and specialised export-oriented" growth mode being pursued in their respective countries. But they too were unable to adopt a durable company governance compromise.

C. When Growth Modes Are Destabilised, Productive Models Must Be Rearranged

The countries where pre-1974 growth had been consumption-driven and where national income distribution was geared not towards external competitiveness but towards internal productivity gains (the United States, France, Italy plus "competitive and competition led" mode countries like Great Britain) were destabilised by the monetary and oil shocks of the 1970s. It is noteworthy that all of these countries' carmakers, without exception, experienced at least one major crisis between 1974 and 1990 – and that during this period none was able to rebuild, adopt or invent a productive model.

The international situation changed again during the 1990s. The liberalisation of capital flows during the late 1980s provoked a speculative bubble at first. In turn, this started to destabilise countries characterised by a "co-ordinated and export-oriented" growth mode – as well as their top corporate performers. In 1990 Toyota experienced a deep-seated crisis of work that forced it to change its company governance compromise and to thoroughly transform its productive model. Honda was wrong about emerging demand. Volkswagen, carried on the wings of its own growth, found it difficult to control costs. Concomitantly, those carmakers that had experienced difficulties in earlier times began to carry out drastic reorganisations and occasionally significant strategic re-orientations. The bursting of Japan's speculative bubble, Europe's restrictive budgetary policies, the emergence of certain countries and above all the transformation of growth modes subsequently changed the relationships between countries; the demand for automobiles; the nature of the labour factor that could be mobilised; and the geography of the automobile.

A number of industrialised countries began to develop a national income distribution that was more "competitive" in nature, *i.e.*, based on a local and category-specific balance of power and on financial opportunism. Directly or indirectly, they accentuated the destabilisation of those "exporting" countries that for the most part had maintained a broadly co-ordinated and moderately hierarchised distribution. Countries' confrontations with one another thus changed in nature and in meaning.

TABLE 4
THE CONDITIONS GOVERNING THE LASTING GOOD PERFORMANCE OF FIRMS: VW, TOYOTA, HONDA (1974-90)

Growth mode of the national income	Consumer-oriented and co-ordinated	Export-oriented and co-ordinated		Competitive and competed
		Specialised	Price	
Viability following 1971-4 monetary and oil shocks	In crisis	Helped		Instability is accentuated
Countries	United States, France, Italy	Germany, Sweden	Japan, Korea	Great Britain
Firms that performed best				
Relevant strategy and coherent company governance compromise				
Industrial models - Sloanian - Toyotian - Hondian		 **VW**	 **Toyota** **Honda**	
Firms that have experienced a crisis				BLMC-Rover (1974,1986)
Profit strategy not relevant to growth mode Company governance compromise that was or that is incoherent	Citroen (1974) Ford (1979) Chrysler (1980) Fiat (1980) PSA (1982) Renault (1984) GM (1986)	Volvo (1984, 1990) Saab (1990) Mercedes (1990) BMW (1990)	Mazda (1974-9) Mitsubishi (1974) Hyundai (1985) Nissan (1986)	

Notes: 1) Coherency of the profit strategy with respect to the growth mode.
2) Adequacy of the governance compromise.
3) The firms in bold letters (VW, Toyota, Honda) have not experienced any crisis during the period.

It is in this context that commenced the rearrangement of a world space that had been split up into several tendencies. To this can be added the generalisation of trade liberalisation; the constitution of regional spaces; and the reaffirmation or affirmation of nations, whether "emerging" or not.

The liberalisation of capital movements gave shareholders back a role that they had not assumed for many years. They tried to wield as much of their new influence as possible in such a way as to forge new company governance compromises and thus shape new productive models.

"Competitive" distributions of income, through the economic and social disparities that they engendered, also gave birth to a second automobile market for pickup trucks, passenger vans, recreational vehicles and other conceptually innovative means of transport. This second market, which in the United States in particular has become just as large as the market for saloon cars, has given a new and broader relevancy to the "innovation and flexibly" strategy that firms like Chrysler and Renault have adopted, following Honda's example. As such, automobile firms are having to make bets nowadays on which global rearrangement will prevail, and on which growth mode will carry the day. This has important consequences for the relevancy of their profit strategies and for the company governance compromises that they will be able to preserve, rebuild or invent.

D. The Two Conditions Underlying Firms' Longevity: Relevancy and Coherency

Given recent research efforts, new representations of the industrial history of the automobile are a long way away from offering the previous representation's touching simplicity, with its tenet that three successive models have each constituted the *one best way* of their respective eras. Yet does this mean that firms' actors (shareholders, banks, owners, executives, employees, labour unions, suppliers, *etc.*) are entirely lacking in common ground? If diversity is omnipresent, how is it possible to choose a productive model that is economically relevant yet socially acceptable in differing environments? Why is it that certain firms have been unable to embody or to invent any model whatsoever, or else have gone through long periods of oscillation between profit and losses

The Pre-Conditions of a Firm's Profitability

- the relevancy of the "profit strategy" to the "growth modes" of the countries in which the firm is operating
- the solidity of the "company governance compromise" that enables the firm's actors to discover and to implement those means (product policy, productive organisation and employment relationship) that are both coherent with the profit strategy that has been adopted and also acceptable to them - in other words, the ability to invent or to adopt a "productive model."

(and even disappeared)?

Contrary to appearances, this more complex and broader vision of the history of the automobile sector has helped us to come up with rules that are general and valid at all times and in all places – and which in any event are much more operational (at both an analytical and at a practical level) than rules which simply consist of affirming that only one model can perform well in a given era (with their naive suggestion that this model should be adopted lock, stock and barrel by anyone concerned). The GERPISA's analysis of firms' trajectories enables us to highlight the two essential conditions of profitability – and to delineate the room to manoeuvre that these conditions afford a firm's actors to invent or else to adopt forms of production that can lead to a compromise which is acceptable to all.

E. What Can a Firm's Actors Do?

The invention of a productive model is not only a matter of willingness and intelligence. It first implies a synchronisation of those conditions that turn the chosen profit strategy into something that is viable – and which enable those means that will allow for its implementation. Actors generally have no control, whether at a cognitive or at a practical level, over this synchronisation. Very often it is only afterwards that they realise which conditions and means are beginning to constitute a system, and that they make efforts to reinforce this process and to theorise it.

Similarly, the adoption of a model that has proven itself elsewhere is more than just a simple exercise in intellectual conversion and/or an application of well-established systems. Actors can never be sure that their decisions will actually allow for a

synchronisation of conditions and means, given the many social processes that are involved and the difficulty of foreseeing their interrelationships.

The practical utility of research and of social science is specifically that they help to identify social processes, clarifying their entanglement, highlighting potential room to manoeuvre and helping the various agents involved to act in a manner that is coherent with their own outlook.

Companies are mortal. This was overlooked by a generation that lived in the post-war boom environment of generally rising living standards and upwards social mobility. Many executives, employees and union representatives did not know what to do when faced with crises that previous methods, whether driven by management or by the unions, could not resolve in a way that satisfied people's expectations and hopes.

Given the analytical framework this book has developed, we can say that to protect one's self from such situations and to support actors' political and social perspectives, a firm's actors can theoretically act on the national "growth mode," the "profit strategy" that has been chosen and the contents of the "company governance compromise." But as we have seen, the ability to act varies greatly for each of these.

First of all, countries are not totally free to choose their growth mode. In addition to their specific resources and history, the choice is subject to their international relationships, particularly their ties with the hegemonic country of the time. A consumption-driven growth and a co-ordinated and moderately hierarchised distribution of national income is only possible if customs barriers or structural advantages shelter a country from more competitive foreign products. Yet a country has to negotiate with other countries when defining its customs regime. The growth mode's determination, something that conditions the various profit strategies' relevancy (*i.e.*, the first condition of profitability), is thus more or less totally out of the hands of the firm's actors. It is much harder for them to have their national growth mode maintained or changed so that it remains or becomes suitable for their profit strategy – and much easier to change their product strategy so that it becomes relevant.

However, actors cannot remain passive. Each has his/her own objectives and vision of the future. Each may wish that one or the other mode be maintained or established, depending on his/her

view, for example, of national sovereignty, or of the proper distribution of the wealth being created. There are historical circumstances where action is not only possible but necessary, *i.e.*, after a war, between 1974 and 1980, or in all likelihood at the dawn of a new century – in other words, whenever previous growth modes have been destabilised and/or when several options exist.

A firm's actors can theoretically choose amongst those profit strategies that have been enabled by the growth modes that are present in the spaces where the firm is operating. Of course, such choices cannot be made freely, far from it. They depend on the product strategy that the firm is already applying, and on other manufacturers' profit strategies. A change in profit strategies cannot be decreed from above. It requires first of all rebuilding the company governance compromise which governs the means that are to be applied, hence a commitment to a long and potentially conflictual process whose outcome is never assured. It then depends on how much room one's competitors have left for a choice to be made. It may be risky to adopt the same strategy as them, given that they are already in business and have built a solid company governance compromise (one that creates synergies between the means they are using). All that remains then is to choose one profit strategy out of all of those that are rendered feasible by the national growth mode – a strategy that has to a certain extent been left untouched. Yet there are also circumstances where it is feasible and even necessary to invent a new strategy, one that creates compatibility between sources of profit previously considered to be contradictory. One example is volume and diversity, two strategies made compatible by General Motors during the interwar period.

F. History Moves Forward

It is clearly in the building of a company governance compromise that a firm"s actors dispose of the greatest room to manoeuvre. But it is still crucial that executives (who often operate under time constraints, notably during crisis periods) avoid declaiming that no solution exists other than the one they have designed. An analysis of automobile companies' trajectories over the past century tells us that this is the best way to never become durably profitable. All

the company governance compromises that have led to the invention or adoption of a productive model have required at least 10 years, plus an intelligent understanding amongst the firm's partners, to ensure that none have been forced to renege their personal convictions or objectives.

In the late 1990s, American firms were exploring a new productive paradigm based on information technologies, productive internationalisation and high yields for invested capital. For many analysts, information technology means that the type of modular production that was observed in the electronics industry will soon generalise to all sectors. Regarding the automobile, asides from the fact that ICT usage is being superimposed on the sector's own innovation trajectory, it has not per se had any determinant effects. It will be deployed, as was the case with automation, in a very differentiated manner, depending on the profit strategies and productive models involved. For example, ICT can be used to develop competition between suppliers in the Sloanian and Hondian models, or to organise cost-cutting in the Toyotian model.

Productive internationalisation carries with it a far greater potential for change. This is because growth modes, far from converging as certain observers have repeatedly claimed, have in fact been re-diversifying. The tensions between the requirements of a firm's strategy and the social and economic space within which the firm is established are likely to foster, through a hybridisation process, the emergence of unprecedented configurations, these being the embryos of new and fully fledged productive models.

The rise of the financial sphere will definitely have an effect on the government compromise in those firms that do not have any control over their own shareholders or funding mechanisms. However, the same will not necessarily apply to carmakers such as Toyota or Honda, since they have been able to preserve their financial independence, as befits the requirements of their own profit strategy.

The euphoria that was provoked by the wave of mergers-acquisitions-alliances in the automobile industry during the late 1990s is starting to give way to a more realistic evaluation of the ever-renewed diversity of productive models.

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